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Customer Number



Patent
Case No.: 55797US014

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: MCCULLOUGH, COLIN
Application No.: 10/730536 Group Art Unit: Unknown
Filed: December 8, 2003 Examiner: Unknown
Title: METHOD OF MAKING ALUMINUM MATRIX COMPOSITE WIRE

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

March 8, 2004
Date

Angie Zontelli
Signed by: Angie Zontelli

Dear Sir:

Pursuant to 37 CFR §§ 1.56, 1.97, and 1.98, enclosed is a completed Form PTO-1449, citing references submitted for consideration by the Examiner. Copies of any cited foreign patents, non-patent literature, and unpublished US application documents are enclosed. Pursuant to the waiver in the Pre-OG Notice, dated July 11, 2003, copies of US patents and published US patent applications are no longer required and are not enclosed. It is respectfully requested that the Examiner initial and return the enclosed Form PTO-1449 to indicate that each reference has been considered.

It is believed that no fee is due; however, in the event a fee is required, please charge the fee to Deposit Account No. 13-3723.

Respectfully submitted,

March 8, 2004
Date

By: [Signature]
Gregory D. Allen, Reg. No.: 35,048
Telephone No.: (651) 736-0641

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Use as many sheets as necessary)

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U.S. Patent Documents

Exam. Init.*	Cite No.	Document Number	Publication Date or Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Doc. Number-(Kind Code if Known)			
	A1	US- 2,883,314	04-21-1959	Martin	
	A2	US- 3,098,723	07-23-1963	Micks	
	A3	US- 3,294,604	12-27-1966	Feick III	
	A4	US- 3,547,180	12-15-1970	Cochran et al.	
	A5	US- 3,631,519	12-28-1971	Hooshang	
	A6	US- 3,795,524	03-05-1974	Sowman	
	A7	US- 3,808,015	04-30-1974	Seufert	
	A8	US- 3,813,481	05-28-1974	Adams	
	A9	US- 4,012,204	03-15-1977	Riewald et al.	
	A10	US- 4,047,965	09-13-1977	Karst et al.	
	A11	US- 4,053,011	10-11-1977	Riewald et al.	
	A12	US- 4,152,149	05-01-1979	Horikiri et al.	
	A13	US- 4,341,823	07-27-1982	Sexton et al.	
	A14	US- 4,450,207	05-22-1984	Donomoto et al.	
	A15	US- 4,544,610	10-01-1985	Okamoto et al.	
	A16	US- 4,590,132	05-20-1986	Dohnomoto et al.	
	A17	US- 4,631,793	12-30-1986	Shintaku et al.	
	A18	US- 4,649,060	03-10-1987	Ishikawa et al.	
	A19	US- 4,751,269	06-14-1988	Bonk et al.	
	A20	US- 4,757,790	07-19-1988	Ushio et al.	
	A21	US- 4,779,563	10-25-1988	Ishikawa et al.	
	A22	US- 4,818,633	04-04-1989	Dinwoodie et al.	
	A23	US- 4,831,707	05-23-1989	Goddard et al.	
	A24	US- 4,835,340	05-30-1989	Muz	
	A25	US- 4,839,238	06-13-1989	Nakatani et al.	
	A26	US- 4,877,643	10-31-1989	Ishikawa et al.	
	A27	US- 4,929,513	05-29-1990	Kyono et al.	
	A28	US- 4,954,462	09-04-1990	Wood et al.	

*Examiner:

Date Considered:

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Substitute for form 1449A/PTO (modified) INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) Page 2 of 5	Application Number	10/730536
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	A29	US- 4,956,523	09-11-1990	Pawluk	
	A30	US- 4,961,990	10-09-1990	Yamada et al.	
	A31	US- 5,002,836	03-26-1991	Dinwoodie et al.	
	A32	US- 5,171,942	12-15-1992	Powers	
	A33	US- 5,126,167	06-30-1992	Matsuno et al.	
	A34	US- 5,170,015	12-08-1992	Kudo et al.	
	A35	US- 5,185,299	02-09-1993	Wood et al.	
	A36	US- 5,435,374	07-25-1995	Fishkis et al.	
	A37	US- 5,464,949	11-07-1995	Markovitz et al.	
	A38	US- 5,501,906	03-26-1996	Deve	
	A39	US- 5,518,597	05-21-1996	Storer et al.	
	A40	US- 5,549,770	08-27-1996	Larker et al.	
	A41	US- 5,554,826	09-10-1996	Gentry	
	A42	US- 5,571,296	11-05-1996	Barber, Jr. et al.	
	A43	US- 6,022,914	02-08-2000	Nowak et al.	
	A44	US- 6,078,010	06-20-2000	Funahashi et al.	
	A45	US- 6,180,232	01-30-2001	McCullough et al.	
	A46	US- 6,245,425	06-12-2001	McCullough et al.	
	A47	US- 6,329,056	12-11-2001	Deve et al.	
	A48	US- 6,336,495	01-08-2002	McCullough et al.	
	A49	US- 6,485,796 B1	11-26-2002	Carpenter et al.	
	A50	US- 6,559,385 B1	05-06-2003	Johnson et al.	

Foreign Patent Documents						
Exam. Init.*	Cite No.	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Ctry. Code	Number-KindCode (if known)			
	B1	DE	3822543 A1	01-25-1990		
	B2	EP	0 461 871 A2	12-18-1991		

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		Ctry. Code	Number-KindCode (If known)				
	B3	JP	10-21758	01-23-1998			English Abstract
	B4	JP	2-155129	14-06-1990			English Abstract
	B5	JP	3-129606	09-04-1989			X
	B6	JP	3-71509	03-27-1991			X
	B7	JP	3-101011	04-25-1991			X
	B8	JP	3-101004	04-25-1991			
	B9	JP	4-44366	07-21-1992			X
	B10	JP	5-290632	04-13-1992			
	B11	JP	52-36274	09-14-1977			X
	B12	JP	7-105761	04-21-1995			English abstract
	B13	JP	7-13056	01-17-1995			English Abstract
	B14	WO	WO 97/00976	01-09-1997			

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS		
Exam. Init.*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	C1	3M Product Brochure, "Continuous Ceramic Fiber Aluminum Matrix Composites," 3M Metal Matrix Composite Project, St. Paul, Minnesota, (date unknown but believed to be prior to filing of the priority application), 6 pages
	C2	ASTM B 230/B 230M - 99, "Standard Specification for Aluminum 1350-H19 Wire for Electrical Purposes," <i>Annual Book of ASTM Standards</i> , Vol. 02.03, (1999), pp. 100-104.
	C3	ASTM D 3379-75, "Standard Test Method for Tensile Strength and Young's Modulus for High-Modulus Single-Filament Materials," <i>Annual Book of ASTM Standards</i> , Vol. 08.01, (1989), pp. 128-131.
	C4	ASTM E 228-95, "Standard Test Method for Linear Thermal Expansion of Solid Materials with a Vitreous Silica Dilatometer," <i>Annual Book of ASTM Standards</i> , Vol. 08.01, (1995), pp. 70-76.
	C5	ASTM E 345-93, "Standard Test Methods of Tension Testing of Metallic Foil," <i>Annual Book of ASTM Standards</i> , Vol. 02.03, (1993), pp. 376-380.
	C6	Blucher et al., "A New Pressure Infiltration Process for Continuous Production of Fiber Reinforced MMC Structural Elements," <i>30th International SAMPE Technical conference Proceedings</i> , Oct. 20-24, 1998, pp. 442-455.

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	C7	Cheng et al., "Preparation of Carbon Fibre Reinforced Aluminum via Ultrasonic Liquid Infiltration Technique," <i>Materials Science & Technology</i> , Vol. 9, (1993), pp. 609-614.
	C8	Costello, "Testing of a Wire Rope," in <i>Theory of Wire Rope, 2nd Edition, Chapter 6</i> , Springer-Verlag, (1997), title page and pp. 72-85.
	C9	Davis et al., Eds., "Metals Handbook® Ninth Edition Volume 15 Casting," ASM International, Metals Park, Ohio, (date unknown but believed to be prior to filing date of the priority application), title page, publication page, pp. 238-241, 275, 281-282, 300-304, 372-373, 487-488, and 755-757.
	C10	Dupont Product Brochure, "Technical Data FP/Aluminum Composites," (date unknown but believed to be prior to filing date of the priority application), p. 81.
	C11	Electric Power Research Institute, "Structural Composite Cores for Overhead Power Transmission Conductors," <i>EM-5110, Research Project 2426-9</i> , (1987), 39 pages.
	C12	Gigerenzer et al., "Drawing of Graphite Fiber Reinforced Aluminum Composites," <i>Failure Modes and Processing of Composites IV</i> , eds., J. A. Cornie and F. W. Crossman, (1977), pp. 359-369.
	C13	Gigerenzer et al., "Hot Drawing of Fiber (Filament) Reinforced Metal-Matrix Composites," <i>ICCM2, Proceedings of the 1978 International Conference on Composite Materials</i> , Toronto, Canada, April 16-20, 1978, title page and pp. 175-188.
	C14	Goddard et al., "Continuous Graphite Fiber MMCs," <i>Engineered Materials Handbook</i> , Vol. 1: Composites, ASM International, (1987) pp. 867-873.
	C15	Hunn, "MMC Overview - 1985," <i>SME Composites in Manufacturing 5</i> , Technical Paper, Los Angeles, California, EM86-106, January 13-16, 1986, 14 pages.
	C16	Isaacs et al., "Structure and Plasticity of Aluminum Reinforced with Continuous Alumina Fibers," <i>Proceedings of the 12th International Riso Symposium on Metallurgy and Materials Science: Metal Matrix Composites - Processing, Microstructure and Properties</i> , (1991), pp. 399-404.
	C17	Kaiser Aluminum and Chemical Sales, Inc., <i>Casting Kaiser Aluminum</i> , "Pig and Ingot Product Data Casting Practices and Characteristics of Molten Aluminum," Oakland, California, (1956), title page, publication page, and pp. 59-61.
	C18	Katzman, "Fiber Coatings for Composite Fabrication," <i>Materials & Manufacturing Processes</i> , Vol. 5(1), (1990), pp. 1-15.
	C19	Nippon Carbon Co. Ltd., "Development of Wire Composite (SiC Fibre "NICALON" Reinforced Aluminum Composite Materials," (Internal Report) (date unknown but believed to be prior to filing of the priority application), pp. 1-24.
	C20	Ozawa et al., "Development and Evaluation Characteristics of SiC Fiber Reinforced Aluminum Composite Wires for Transmission Line," <i>The Electricity Society Electronics and Energy Department Symposium</i> , (1995), 6 pages and translation, 9 pages.
	C21	Ozawa et al., "Mechanical Characteristics of SiC Fiber Reinforced Aluminum Composite Material," <i>The Electricity Society National Symposium</i> , (1995), 1 page and translation, 2 pages.

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	C22	Ozawa et al., "Mechanical Characteristics of SiC Fiber Reinforced Composite Wire," <i>The Electricity Society National Symposium</i> , (1996), 2 pages and translation, 3 pages.
	C23	Pan et al., "Application of Ultrasonic Infiltration in Metal Matrix Composites," <i>Key Engineering Materials</i> , Vols. 104-107, (1995), pp. 275-282.
	C24	Pan et al., "A Study of the Ultrasonic Technique Applied in Fabrication of SiC Fiber-Reinforced Aluminum Composites," <i>Journal of Material Research</i> , Vol. 10(3), (1995), pp. 596-601.
	C25	Ronald et al., "Advanced Materials to Fly High in NASP," <i>Advanced Materials & Processes</i> , Vol. 5, (1989), pp. 29-35.
	C26	Tokyo Rope Mfg. Co. Ltd., "Technical Data on CFCC," (Internal Report), Tokyo, Japan (date unknown but believed to be prior to filing date of the priority application), 45 pages.
	C27	Yasutomi et al., "Effects of the SiC/Al Interface Reaction on Fracture Behavior of a Composite Conductor Using SiC Fiber Reinforced Aluminum for Next Generation Power Equipment," <i>Journal of Materials Science</i> , Vol. 34, (1999), pp. 1583-1593.
	C28	Product Bulletin, "3M Ceramic Fiber Products 3M™ Nextel™ 440 Woven Fabrics", © 3M 1997 98-0400-4843-5
	C29	Patent Abstracts of Japan, vol. 1996, No. 04, 30 April 1996 (1996-04-30) & JP 07 335029A (Furukawa Electric Co. Ltd.; The), 22 December 1995 (1995-12-22) the whole document.
	C30	Barnes, Electric Cables, London Sir Isaac Pitman & Sons Ltd., pp. Frontspiece and 110-115
	C31	High-Performance Composites, March/April 1999, page 24
	C32	Mechanical Engineering, June 1999, "Running Energy" beginning pp. 58-61.

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